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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *4/5/2010*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) *1-28* is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☒ All b)☐ Some * c)☐ None of:

       1.☒ Certified copies of the priority documents have been received.

       2.☐ Certified copies of the priority documents have been received in Application No. _____.

       3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
     Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

2.   Claims 1-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Mukherjee et al. (US Pub 2003/0012162) further in view of Wang et al. (US Pat

6,603,761) further in view of Slog (US Pub 2001/0012779) and/or Ho et al (US Pat

6,408,181).

Claims 1 and 16, Mukherjee teaches a communication apparatus for integrating

a packet network with a circuit-switched telephone network (figs. 1, and 4), the

apparatus comprising:

a packet network interface, for coupling to a packet switch in a packet network

(IP network 12 of fig. 3, pars. 0023, 0024 and 0030).

a telephone network interface, for coupling to a node in a circuit-switched

telephone network *(Local Exchange 29 and PSTN 27 of fig. 4, pars. 0023, 0024 and

0037);* and

a fixed mobile convergence gateway (FMC) (Radio Network Server 42 of fig. 7),

coupled between the packet network (IP network 12) and telephone network interfaces

(telephone network 14 of fig. 1) and operative to emulate *(par. 0030)* a mobile switching

center (MSC) *(par. 0025 and 0028 shows the MSC 32 of the PLMN network 24)* and a

visitor location register (VLR) *(VLR 35 of fig. 2)* in the circuit-switched telephone network

(PSTN network 14 of fig. 4).

register subscribers in the packet network for telephone service in the circuit-

switched telephone network *(Assuming that mobile terminal 26(d) is to be allowed*

access and registration procedures are completed, mobile terminal 26(d) is provided

services by the IP network 12 as follows. The TA 34 converts between wireless

protocol, in this case GSM, from the wireless terminal 26(d), and the appropriate IP

protocol, for example H.323, messages to gatekeeper 22, [0035])

sending an Update Location message to a Home Location Registry (HLR) in the

circuit-switched telephone network *(Referring to FIG. 2A, registration, e.g. location*

update procedure, is shown. A mobile terminal 26(n) contacts the TA 34. The TA 34, in

turn, accesses the appropriate PLMN HLR 33 using the gatekeeper 22 and gateway 16.

Registration of the mobile terminal 26(n) is thus completed in the TA 34 service area 10,

[0034]);

Mukherjee does not explicitly teach assigning telephone numbers in the circuit-

switched telephone network to user terminals in the packet network and to connect

telephone calls, using the assigned telephone numbers, between telephones in the

circuit-switched network and the user terminals.

Wang teaches assigning telephone numbers in the circuit-switched telephone

network to user terminals *(specifically, col. 6, lines 12-19, 53-58 and col. 8, lines 4-11)*

for the purpose of integrating the proper pieces of wireless and wireline networks and

secure communication, using IP networks and protocols as an alternative to the existing

telephony-based approach *(see Abstract).*

Therefore it would have been obvious to the ordinary skilled artisan at the time of

the invention was made to incorporate the teaching of Wang into the teaching of

Mukherjee for the purpose of enhancing greater roaming quality for the caller.

While Mukherjee teaches the registration process to update location at the HLR

and VLR, Mukherjee, in view of Wang, does not detail the claimed feature of receiving

an Insert Subscriber Data (ISD) message from the HLR; sending an ISD result message

to the HLR; and receiving an Update Location Result message from the HLR.

While examiner believes that an ordinary artisan by the obviousness would

reason that the IDS operation is a detailed activity of updating the location of the

subscribers, examiner would like to present:

(I) Skog who details the claimed feature by using the MAP ISD (insert subscriber

data) and MAP DSD (delete subscriber data) operation "by invoking the MAP ISD

operation, the SDR 115 (or a portion thereof) is sent to the destination VLR. The MAP

ISD operation can be invoked as a consequence of, for example, (i) updating location or

restoring data and (ii) an alteration or addition of the subscriber data that should be

reported to an MSC/VLR associated with the LA in which the MS 110 is located. If the

entire subscriber data that the HLR 105 is sending fails to fit within a single Invoke

component, then multiple Invoke components may be sent. When the MS 110 is leaving

the LA 150 of the MSC/VLR 130, on the other hand, a MAP Delete Subscriber Data

(DSD) operation 145 may be used to inform the MSC/VLR 130 about withdrawing the subscriber data", ([0027, 0034, 0035, 0038 and 0039]).

Therefore it would have been obvious to the ordinary skilled artisan at the time of the invention was made to incorporate the teaching of Skog into the teaching of Mukherjee for the purpose of clearly defining that the claimed feature presented is a well known practice in the updating location in the Home and Visitor Location Registration. The purpose of the incorporation is not to seek any modification in coding of software or in developing of new hardware, it is rather reemphasizing the detail of the update operation.

(II)   Ho also teaches the claimed feature as he discusses Referring now to FIG. 1B, shows the location update procedure when a mobile terminal moves from the service area of VMSC 121 to that of VMSC 223. When a mobile terminal 8 detects that it is in a new location area (LA), it will send a Location Update (LU) 25 message to the MSC 23 serving that LA through the GSM air channel, BTS 14 and BSC 16. If the mobile terminal 8 remains in the same VMSC 21, the VMSC 21 simply updates its associated VLR 13 indicating the new LA of the mobile terminal 8 and the location update procedure is complete. If the mobile terminal 8 has moved to a new VMSC 23, the VMSC 23 sends an Update Location (UL) 27 message to the HLR 11 of the mobile terminal 8. The HLR 11 updates its record indicating the new VMSC 23 of the mobile terminal 8 and sends an Insert Subscriber Data (ISD) 29 message to this new VMSC 23. This ISD 29 message contains a copy of the mobile terminal's subscriber profile. On receiving this ISD 29 message, the VMSC 23 stores the subscriber profile in its

associated VLR 13 and sends an ISD ACK 31 message to the HLR 11. The HLR 11

then sends a UL ACK 33 to the VMSC 23. At the same time, the HLR 11 will-also send

a Cancel Location (CL) 35 message to the previous VMSC 21 of the mobile terminal 8.

The previous VMSC 21 then deletes the subscriber profile for the mobile terminal 8 and

sends a CL ACK 37 message to the HLR 11. This location update procedure allows the

HLR 11 to keep track of the up-to-date VMSC ID of each of its supported mobile

terminals, col. 3, line 52 – col. 4, line 11; AND/OR When the mobile terminal moves to

another MSC area, the HLR 11 will cancel the cache entry recorded at the GMSC 7.

The first call that arrives after an inter-MSC movement will be delivered using call

delivery method as shown an in FIG. 3. Thereafter, the method and system of the

present invention is used to delivery subsequent calls as shown in FIG. 5. FIG. 6

depicts a detailed block diagram for location update and cache removal in accordance

with a preferred embodiment of the present invention. Referring to FIG. 6, when the

terminal or mobile subscriber 8 moves to another MSC, it sends a location update

request to the new VMSC 70, which then sends an Update Location (UL) 72 message

to the HLR 11. The HLR 11 determines the GMSCs that has cache entries for the

mobile terminal by table lookup and sends Cancel Cache 74 messages to these

GMSCs 7. The Cancel Cache 74 message is a propriety message similar to the Cancel

Location message as defined in the GSM standard. The GMSC 7 then deletes the

cache 34 entry for the terminal and sends a Cancel Cache ACK 76 message to the HLR

11. The HLR 11 then updates the MSISDN-GMSC mapping table 58 to remove the

GMSC 78, BC 38 and MSRN 22 associated with the target terminal 24 and sends an

ISD 80 message to the new VMSC 70. The new MSC 70 responds by forwarding an

ISD ACK 82 message and the HLR 11 sends back an UL ACK 84 message to the new

MSC 70, col. 5, lines 42-67.

Therefore it would have been obvious to the ordinary skilled artisan at the time of

the invention was made to incorporate the teaching of Ho into the teaching of Mukherjee

for the purpose of clearly defining that the claimed feature presented is a well known

practice in the updating location in the Home and Visitor Location Registration. The

purpose of the incorporation is not to seek any modification in coding of software or in

developing of new hardware, it is rather reemphasizing the detail of the update

operation.

As to claims 2 and 17, Mukherjee, in view of Wang, teaches the packet network

comprises an Internet Protocol (IP) network (IP network 10 and 12 of fig. 1), and

wherein the telephone network (PSTN 14) comprises a cellular telephone network (BTS

28 indicates the cellular network; also PLMN 24); see par. 0024 also see claims 1 and

16 above).

As to claim 3 and 18, Mukherjee does not explicitly teach the FMC processor is

arranged to **assign** different, first and second telephone numbers to a given user

terminal in the packet network, wherein the first telephone number belongs to the

cellular telephone network, and the second telephone number belongs to a public

switched telephone network (PSTN).

Wang teaches the convergence processor is adapted to assign different, first and

second telephone numbers to a given user terminal in the packet network, wherein the

first telephone number belongs to the cellular telephone network (col. 3, lines 65-66),

and the second telephone number belongs to a public switched telephone network

(PSTN) (col. 6, lines 12-19).

As to claims 4 and 19, Mukherjee does not explicitly teach the FMC is arranged

to assign to the user terminals telephone numbers having a first country code, while the

user terminals are located in a country having a different, second country code.

Wang teaches the claimed feature (col. 1, lines 16- 20, col. 6, lines 12-19).

As to claims 5 and 20, Mukherjee does not explicitly teach the packet network

interface comprises a session border controller, which is operative to perform Network

Address Translation (NAT). The ordinary skilled artisan should however understand

that the NAT is inherently a well known art in the packet network (sometimes referred to

as network or IP masquerading or a process of modifying network address information)

for transmitting the traffic across the networks or devices *(RFC 1918)*.

Furthermore, Wang teaches the packet network interface comprises a session

border controller, which is operative to perform Network Address Translation (NAT) *(col.*

8, lines 4-20 and 44-51).

As to claim 6, Mukherjee, in view of Wang, teaches the telephone network

interface comprises a media gateway *(IP network 12 of fig. 1 has one or more*

gateways, par. 23).

As to claim 7, Mukherjee teaches a soft-switch, which is coupled between the

packet network and telephone network interfaces and the convergence processor so as

to convey instructions from the FMC to the packet network add telephone network

interfaces regarding handling of the telephone calls to end from the user terminals *(par.*

28-29 describes the concepts and practice of soft-switch application. As appreciated by

the ordinary skilled artisan, soft switch is a simple device installed in the PSTN network

(5ESS system) for connecting calls entirely by means of software application).

As to claim 8, Mukherjee, in view of Wang, does not explicitly teach the soft-

switch is arranged to communicate with the packet network and telephone network

interfaces by transmitting and receiving at least one of Session Initiation Protocol (SIP)

or and SIP for telephones (SIP-T) packets.

It is obvious and as appreciated by the ordinary skilled artisan that Mukherjee

teaches the use of H.323 protocol (par. 0011, 0023, 0030, 0035, 0038, 0042)

transmitting and receiving signals between the IP network 12 and mobile terminal 26.

Replacing H.323 with SIP technique is equally acceptable since both protocols are

dealing with signal processing designed for the IP networks.

As to claims 9, 14, 22 and 27, Mukherjee, in view of Wang, teaches the FMC is

arranged to receive registration requests from the user terminals and, in response to the

registration requests, to register the user terminals in the HLR.*(if the terminal is not*

previously registered, registration message is sent to HLR 33, par. 33). Furthermore,

Mukherjee teaches for routing information with respect to a call placed from the

telephone network to a telephone number that is assigned to a user terminal having a

network address *(par. 0023)* in the packet network and, responsively to the request, to

cause the packet network interface to route the call to the network address of the user

terminal *(par. 0028-0029).*

As to claims 10 and 23-24, Mukherjee, in view of Wang, teaches the FMC is

arranged to communicate with the HLR in order to determine respective service profiles

applicable to the user terminals *(emulate wireless infrastructure, par. 0030. Note that*

the registration process is to build appropriate profile for specific tasks and service, see

the entire document).

As to claims 11-13 and 26, Mukherjee, in view of Wang, teaches the FMC is

arranged, responsively to the service profile *(note that the registration process is to*

build appropriate profile for specific tasks and service, see the entire document)., to

invoke an Intelligent Network (IN) *(fig. 1)* service in the telephone network that is to be

applied to a call *(emulate wireless infrastructure, par. 30).* Furthermore, Mukherjee, in

view of Wang, teaches an indication of a request from one of the user terminals to set

up a call *(par. 0029),* and responsively to the indication, to cause the telephone network

interface to route the call *(MSC 32 seeking routing information, par. 0028)* to a

telephone number in the telephone network in accordance with an applicable service

profile *(when registered; also par. 0028-0029).*

As to claims 15 and 28, see claims and/or 16 for the teaching on the use MAP to

communicate with HLR.

As to claim 21, Mukherjee, in view of Wang,   teaches connecting the telephone

calls comprises converting media and signaling messages between protocols used

respectively in the packet and telephone networks *(A Network Access Controller (NAC) 44 is connected to the Radio Network Server (RNS) 42 and is configured to convert signals between a wireless protocol, GSM for example, and IP protocol, such as H.323, for facilitating transmission of the signals between the IP network 12 and the mobile terminal 26, par. 0042).*

As to claim 25, Mukherjee, in view of Wang, teaches communicating with the HLR comprises determining the respective service profiles initially upon registration, and comprising updating one or more of the service profiles thereafter while the user terminals are in operation *(see fig. 2, registration, e.g., location update procedure is shown).*

Response to Arguments

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this office action. Accordingly, **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PHUNG-HOANG J. NGUYEN whose telephone number is (571)270-1949. The examiner can normally be reached on Monday to Thursday, 8:30AM - 5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz can be reached on 571 272 7499. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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